

REMARKS

These remarks are responsive to the Office Action dated March 26, 2003. Claims 1-18 are pending in the present application. Claims 1-18 have been rejected. Claims 3-5, 10-11, and 15-17 have been amended to address claim objections, as well as to correct typographical and grammatical errors. New claims 19-22 have been added.

Accordingly, claims 1-22 are pending. For the reasons set forth more fully below, Applicants respectfully submit that the remaining claims are allowable. Consequently, reconsideration, allowance and passage to issue are respectfully requested.

35 USC §103 Rejections

Claims 1, 7, and 13

Independent claims 1, 7, and 13 are provided below for ease of review.

1. (original) A method for recovering data in a plurality of systems comprising the steps of:

- a) allowing at least one system of the plurality of systems to fail;
- b) retaining a plurality of locks of the at least one system; and
- c) restarting the at least one system utilizing minimal resources.

7. (original) A system for recovering data in a plurality of computer systems comprising:

means for allowing at least one computer system of the plurality of computer systems to fail;
means for retaining a plurality of locks of the at least one computer system; and
means for restarting the at least one computer system utilizing minimal resources.

13. (original) A computer readable medium comprising program instruction for recovering data in a plurality of systems, the program instructions comprising the steps of:

- a) allowing at least one system of the plurality of systems to fail;
- b) retaining a plurality of locks of the at least one system; and
- c) restarting the at least one system utilizing minimal resources.

The Examiner has stated:

Claims 1-18 are rejected under 35 USC 103(a) as being unpatentable over Harderle et al. (US Patent 6,185,699) and in view of Watts et al. (US Patent 6,275,832).

As per independent claims 1, 7, 13, Harderle rendered by the following:

- a) "allowing at least one system of the plurality of systems to fail" at Fig. 1, col. 5, lines 47-49;
- c) "restarting the at least one system utilizing minimal resources" at Fig. 1, col. 5, lines 53-57.

Hardele does not teach specifically retaining locks at the time of restarting the system after failure. However, Watts teaches the following:
b) "retaining a plurality of locks of the at least one system" at Fig. 3, col. 7, lines 65 to col. 8, line 41.

Thus, it would have been obvious to one of ordinary skilled in the art at the time of the invention to incorporate computer-programming instructions to convert nonstandard database record to a standard database record. Hardele and Watts are combined as they teach recovery techniques from database failure and to retain of locks during database restarting time. In order to REDO/UNDO process locks of the database must be retained at the time of restarting system from failure state.

Applicants respectfully disagree with the Examiner's rejections.

The present invention provides a method and system for recovering data in a shared data system. In accordance with the present invention, minimal resources are utilized to restart the failed system. Accordingly, the data is recovered quickly and with minimal system disruption (Specification generally and specifically at page 2, lines 11-22).

Haderle discloses a method that maintains system availability during restart recovery, and more specifically, provides steps that allow transactions to access data that does not have restart recovery work pending (Abstract). However, Haderle does not teach the step of "restarting the at least one system utilizing minimal resources," as recited in independent claim 1.

Haderle describes a restart recovery mechanism, which adds functionality to a general restart recovery mechanism (column 5, line 53, to column 6, line 10). The additional functionality allows transactions to access data that does not have restart recovery work pending (column 2, lines 29-43). This requires resources that enable the system to accept new work. Such resources are not necessary for the restart recovery process. Requiring such resources is the opposite result from "utilizing minimal

resources,” as recited in independent claim 1. Haderle utilizes such resources and therefore does not use minimal resources. In contrast, restarting the system utilizing only minimal resources, *in combination with* the other steps recited in claim 1, reduces the amount of CPU and storage required to perform a restart/recovery process and reduces the amount of time required to recover the data being protected (Specification, page 4, lines 13-24). The added functionality of Haderle does not provide this benefit.

Because Haderle restarts the system using resources **in addition to** using resources for recovering data, Haderle *teaches away* from using minimum resources as claimed and thus fails to teach or suggest “restarting the at least one system utilizing minimal resources” in combination with the other elements, as recited in claim 1. Instead, Haderle and Watts teach a method for allowing transactions to access data that does not have restart recovery work pending (Haderle, Abstract) and a method for undoing a transaction using a lock, among other resources including a transaction identifier, transaction operation indicator, and a data unit (Watts, Abstract).

Therefore, independent claim 1 is not obvious in view of Haderle and Watts and claim 1 is allowable over these references.

New claims 19-22

New claims 19-22 have been added to further define the scope and novelty of the present invention. Specifically, new independent claim 19 recites the step of “restarting the at least one system using only resources that are necessary for recovering the data.” Support for new claims 19-22 is found throughout the Specification, and in particular, on page 4, lines 13-22. No new matter has been presented. Accordingly, claims 19-22 are allowable for at least the reasons stated above.

Remaining dependent claims

Dependent claims 2-6, 8-12, and 14-18 depend from claims 1, 7, and 13. Accordingly, the above-articulated arguments related to claims 1, 7, and 13 apply with

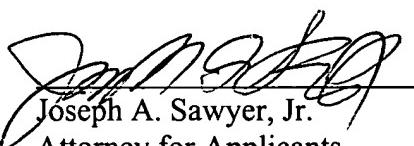
equal force to claims 2-6, 8-12, and 14-18 and are thus allowable over the cited references for at least the same reasons as claims 1, 7, and 13.

Conclusion

In view of the foregoing, Applicants submit that claims 1-22 are patentable over the cited references. Applicants, therefore, respectfully request reconsideration and allowance of the claims as now presented.

Applicants' attorney believes this application in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,



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